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ETH

FEI

EPFL

EMPA

ART

ecoinvent data v2.2

the 2010 version of the most comprehensive and most popular public LCI database

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The mission of the ecoinvent Centre is to provide the most relevant, reliable, transparent and accessible LCI data for users all over the world. For this, the ecoinvent Centre provides the database ecoinvent in its version v2.2 with more than 4000 industrial LCI datasets to assist every-day work in areas like IPP, Design for Environment (DfE), Environmental Management Systems (EMS) or Product Stewardship.

Compared to the version v2.1, the following changes have been implemented in this new version v2.2 of ecoinvent:

1. NEW DATASETS:

Almost 150 additional datasets can be found in this latest version of the database ecoinvent. Among them are e.g. ...

- ... new data in the area of *pesticides*;
- ... *country-specific* data of *freight and passenger transport* by rail of several European countries;
- ... data of new/additional means of transport of a person (*two-wheels, e-mobility, city cars*);
- ... data of new means of communication (i.e. *videoconference*);
- ... *additional electricity mixes* for Switzerland (representing the certified electricity production and the consumer mix, including and excluding the share of certified electricity);
- ... and, data of *coal tailings* in order to complete the tailings issue (sulphidic and uranium tailings model have been added in the framework of the update to version v2.1).

The list on the following page gives an overview of all new datasets.

(i) PESTICIDES			(v) MOBILITY		
acetonitril, at regional storage	RER	kg	bicycle, at regional storage	RER	unit
captan, at regional storage	RER	kg	disposal, bicycle	CH	unit
chlorothalonil, at regional storage	RER	kg	disposal, electric bicycle	CH	unit
chlorotoluron, at regional storage	RER	kg	disposal, electric scooter	CH	unit
diazine-compounds, at regional storehouse	RER	kg	disposal, electric vehicle, LiMn2O4	RER	unit
diazole-compounds, at regional storehouse	RER	kg	disposal, passenger car, diesel EURO5, city car	RER	unit
dimethenamide, at regional storage	RER	kg	disposal, passenger car, electric, LiMn2O4, city car	RER	unit
folpet, at regional storage	RER	kg	disposal, scooter	CH	unit
fosetyl-Al, at regional storage	RER	kg	electric bicycle, at regional storage	RER	unit
fungicides, at regional storehouse	RER	kg	electric motor, electric vehicle, at plant	RER	kg
growth regulators, at regional storehouse	RER	kg	electric scooter, at regional storage	RER	unit
herbicides, at regional storehouse	RER	kg	maintenance, bicycle	CH	unit
insecticides, at regional storehouse	RER	kg	maintenance, electric bicycle	CH	unit
isoproturon, at regional storage	RER	kg	maintenance, electric scooter	CH	unit
mancozeb, at regional storage	RER	kg	maintenance, electric vehicle, LiMn2O4	RER	unit
mecoprop, at regional storage	RER	kg	maintenance, passenger car, diesel, EURO5, city car	RER	unit
metalddehyde, at regional storage	RER	kg	maintenance, passenger car, electric, LiMn2O4, city car	RER	unit
melamitron, at regional storage	RER	kg	maintenance, scooter	CH	unit
napropamide, at regional storage	RER	kg	operation, average train	AT	pkm
orbencarb, at regional storage	RER	kg	operation, average train	IT	pkm
pendimethalin, at regional storage	RER	kg	operation, average train	FR	pkm
prosulfocarb, at regional storage	RER	kg	operation, average train	DE	pkm
pyridine-compounds, at regional storehouse	RER	kg	operation, average train	BE	pkm
			operation, average train, SBB mix	CH	pkm
			operation, electric bicycle	CH	km
(ii) CHEMICALS / PLASTICS			operation, electric bicycle, certified electricity	CH	km
concentrated lithium brine (6.7 % Li), at plant	GLO	kg	operation, electric scooter	CH	km
ethylene carbonate, at plant	CN	kg	operation, electric scooter, certified electricity	CH	km
lithium fluoride, at plant	CN	kg	operation, freight train	AT	tkm
lithium hexafluorophosphate, at plant	CN	kg	operation, freight train	IT	tkm
Manganese dioxide oxidation	RER	kg	operation, freight train	FR	tkm
manganese oxide (Mn2O3), at plant	CN	kg	operation, freight train	DE	tkm
methylamine, at plant	RER	kg	operation, freight train	BE	tkm
phosphorous pentachloride, at plant	CN	kg	operation, freight train, diesel, with particle filter	CH	tkm
polystyrene foam slab, 100% recycled, at plant	CH	kg	operation, high speed train	FR	pkm
polystyrene foam slab, 45% recycled, at plant	CH	kg	operation, high speed train	IT	pkm
polystyrene scrap, old, at plant	CH	kg	operation, metropolitan train, SBB mix	CH	pkm
potassium carbonate from manganese dioxide oxidation, at plant	RER	kg	operation, passenger car, diesel, EURO5, city car	CH	km
potassium permanganate, at plant	RER	kg	operation, passenger car, electric, LiMn2O4	CH	km
			operation, passenger car, electric, LiMn2O4, certified electricity	CH	km
(iii) ENERGY			operation, passenger car, electric, LiMn2O4, city car	CH	km
electricity, certified electricity	CH	kWh	operation, passenger car, electric, LiMn2O4, city car, certified electricity	CH	km
electricity, consumer mix	CH	kWh	operation, scooter	CH	km
electricity, high voltage, certified electricity, at grid	CH	kWh	passenger car, diesel, EURO5, city car, at plant	RER	unit
electricity, high voltage, consumer mix, at grid	CH	kWh	passenger car, electric, LiMn2O4, at plant	RER	unit
electricity, low voltage, certified electricity, at grid	CH	kWh	passenger car, electric, LiMn2O4, city car, at plant	RER	unit
electricity, low voltage, consumer mix, at grid	CH	kWh	scooter, ICE, at regional storage	RER	unit
electricity, medium voltage, certified electricity, at grid	CH	kWh	transport, average train	AT	pkm
electricity, medium voltage, consumer mix, at grid	CH	kWh	transport, average train	IT	pkm
electricity, wood, at distillery	SE	kg	transport, average train	FR	pkm
ethanol, 95% in H2O, from wood, at distillery	SE	kg	transport, average train	DE	pkm
ethanol, 99.7% in H2O, from Swedish wood, at service station	CH	kg	transport, average train	BE	pkm
ethanol, 99.7% in H2O, from wood, at distillation	SE	kg	transport, average train, SBB mix	CH	pkm
liquefied petroleum gas, at service station	CH	kg	transport, bicycle	CH	pkm
petrol, 85% vol. ethanol, from Swedish wood, at service station	CH	kg	transport, electric bicycle	CH	pkm
wood, in distillery	SE	kg	transport, electric bicycle, certified electricity	CH	pkm
			transport, electric scooter	CH	pkm
(iv) ELECTRONICS			transport, electric scooter, certified electricity	CH	pkm
Anode, lithium-ion battery, graphite, at plant	CN	kg	transport, freight, rail	AT	tkm
Cathode, lithium-ion battery, lithium manganese oxide, at plant	CN	kg	transport, freight, rail	IT	tkm
chassis, network main devices	RER	kg	transport, freight, rail	FR	tkm
graphite, battery grade, at plant	CN	kg	transport, freight, rail	DE	tkm
network access devices, internet, at user	CH	unit	transport, freight, rail	BE	tkm
router, IP network, at server	CH	unit	transport, freight, rail, diesel, with particle filter	CH	tkm
separator, lithium-ion battery, at plant	CN	kg	transport, high speed train	FR	pkm
single cell, lithium-ion battery, lithium manganese oxide/graphite, at plant	CN	kg	transport, high speed train	IT	pkm
use, computer, laptop, videoconference	CH	h	transport, metropolitan train, SBB mix	CH	pkm
use, computer, laptop, videoconference, certified electricity mix	CH	h	transport, passenger car, diesel, EURO5, city car	CH	pkm
use, computer, laptop, work at home	CH	h	transport, passenger car, electric, LiMn2O4	CH	pkm
use, computer, laptop, work at home, certified electricity mix	CH	h	transport, passenger car, electric, LiMn2O4, certified electricity	CH	pkm
use, IP network, videoconference	CH	h	transport, passenger car, electric, LiMn2O4, city car	CH	pkm
use, IP network, work at home	CH	h	transport, passenger car, electric, LiMn2O4, city car, certified electricity	CH	pkm
use, network access devices	CH	h	transport, scooter	CH	pkm
use, network access devices, certified electricity	CH	h			
videoconference, laptop, participant	CH	h			
videoconference, laptop, participant, certified electricity mix	CH	h			
work at home, corporate access	CH	h			
work at home, corporate access, certified electricity mix	CH	h			
			(vi) WASTE TREATMENT		
			disposal, spoil from coal mining, in surface landfill	GLO	kg
			disposal, spoil from lignite mining, in surface landfill	GLO	kg
			disposal, tailings from hard coal milling, in impoundment	GLO	kg

2. NEW IMPACT ASSESSMENT METHODS:

Two new LCIA methods (USEtox, ReCiPe) have been included; for the latter one three different weighting schemes on both levels (midpoints, endpoints) have been included. More information about these methods can be found (soon) in the updated ecoinvent report No.3, the implementation report of the LCIA methods.

3. CHANGES IN IMPACT ASSESSMENT METHODS

A harmonisation step has been undertaken concerning the issue of the long-term emissions (resp. their valuation), as in version 2.1, the issue has been implemented in two different ways. In version 2.2, for the following methods, two different implementations can be found in the database - one including factors for long-term emissions; and a second one without these factors:

- CML method,
- Eco-Indicator'99 (only the Hierarchist and the Egalitarian perspective),
- EDIP (version 97 and 2003),
- ReCiPe (Midpoints and Endpoints - each again only for Hierarchist and Egalitarian perspective),
- USEtox

More information about the use of the various implementations of these LCIA methods can be found (soon) in the updated ecoinvent report No.3, the implementation report of the LCIA methods.

4. FURTHER CHANGES

All the errors discovered & identified since the publication of the last version of the database (i.e. data v2.1) have been corrected for this new version of the database.

In addition, double entries of several chemical products (helium, 1-butanol, acrylonitrile) have been eliminated and several punctual updates (insulation materials, biogas mix Switzerland) have been integrated into the database.

A more detailed overview of all these corrections and changes - as well as a complete documentation of the new datasets - can be found (soon) in the latest update of report No.16, the report about the changes between v2.01, v2.1 and v2.2.